TRANSFORMATIONAL COMMUNICATION ARCHITECTURE

The Transformational Communications Architecture (TCA) is an overall joint communications concept that aims to provide data connectivity to all echelons of the force. This architecture will deliver more than an order-of-magnitude improvement in connectivity, capacity, interoperability, availability, security, and speed. The TCA provides this through the incorporation of advanced laser and radio frequency technologies, software configurable terminals, packet switching, dynamic bandwidth resource allocation, and network and interface standards. It also implements a new

concept for the management and operation of large integrated and interconnected networks that concurrently and seamlessly connect people and machines with high reliability, survivability, and responsiveness.

The programs that will form the foundation of the TCA are the Joint Tactical Radio System (JTRS), the Transformational Communications System (TCS), Advanced Extremely High Frequency (AEHF) Satellites, and the Mobile User Objective System (MUOS). The new capabilities they provide include ground terminals and satellite constellations that will meet future networked force requirements.

The TCA will provide dynamic, end-to-end accessibility and coverage for global requirements across the civil, federal, and intelligence communities. In addition, the TCA will benefit from an all-Internet Protocol (IP) environment, while providing an integrated network management system, end-to-end information dissemination processes, and security management. Finally, TCA is the end-to-end satellite communication transport segment of the broader information enterprise made up of the DOD Global Information Grid (GIG), other agency fiber backbones, and terrestrial networks.

Once realized, the TCA will enable next-generation space-to-space, space-to-ground, airborne-to-space, selected ground and control systems to provide interoperable, wideband protected, broadcast, and data relay communications. The TCA will also provide operational management systems and the associated interfaces necessary to provide the prescribed communications capability across the GIG and the intelligence community.

TCA provides a robust, dynamic and flexible information enterprise environment to warfighters. Every asset in the battle space is addressable and capable of generating, processing, or routing information. Ground, airborne, sea-borne, and space-based communication components use well-defined, interoperable protocols and interfaces for efficient data exchanges at the tactical level, dynamic information sharing at the operational level, and responsive decision-making and dissemination at the strategic level.